Original Article

CARTWRIGHT'S METHOD AS A PHYSICO-CHEMICAL MARKER OF ANTIMONIUM CRUDUM BIOLOGICAL EFFECT

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Abstract

Mice bearing Leishmania (L) amazonensis infection and treated with Antimonium crudum (AC) 30cH presented significant reduction of the monocyte migration to the site of infection with clinical improvement. In vitro, the treatment of infected macrophages with AC 30cH produced inhibition of the parasite-induced peaks of CCL2 (a chemokine for monocytes migration) and inhibition of lysosome activity, explaining the results obtained previously in vivo. In the following studies, physical-chemical parameters of the remedy and respective controls were evaluated, to search for a correlation with the former described biological effects. The study of polarity changes in different water-based dilutions of AC using Cartwright's method, revealed dilution-dependent variations in the absorbance of three solvatochromic dyes ET 33, BDN and methylene Violet (MV), used as "probes" to evaluate the dipole features of the medicine. The electrical activity of the homeopathic preparations appears to be dilution-dependent and related to their biological effects. Further experiments were performed using samples of the supernatant of infected macrophages after 96 hours of incubation with AC in different dilutions. These samples were processed using the same procedures as used for the original medicines and were analyzed by MV method. All tested potencies presented a sharp increase of absorbance at 580 nm, in relation to all controls (supernatant from untreated cells and cells treated with succussed water), as performed by <u>one-way</u> ANOVA, being F = 176.208; p = 0.001and $\eta_2 = 0.988$. This results strongly suggest that biological systems could amplify the electric signal and the following changes in the medium polarity.

Keywords: Spectrophotometry, solvatochromic dyes, *Antimonium crudum*, *Leishmania amazonensis*.

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